pc-dmis	PART NAME : PN440004-n-Trans-Rings-000-TB9AES015-v4-IR		February 23, 2011	14:53
	REV NUMBER :	SER NUMBER :	STATS COUNT :	1

440004-n
FNAL 1.3GHZ TESLA
RF CAVITY
ASSEMBLY
measurement of Transition Rings
@ 000 rotational orientation

'Inspected by ' : Robert Riley
'Cavity Number' : TB9AES015
' ' : 1102231352

Datum Discs

⌖	MM	LOC1 - CIRC_DATUM_DISC_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.000	0.000	0.000	0.000	0.000
Y	25.000	27.026	2.026	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.822	-0.178	0.050	0.050	0.128
RN	0.000	0.072	0.072	0.050	0.000	0.022

⌖	MM	LOC2 - CIRC_DATUM_DISC_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.000	0.000	0.000	0.000	0.000
Y	-1032.384	-1032.047	0.337	10.000	10.000	0.000
Z	0.000	0.000	0.000	0.000	0.000	0.000
D	111.000	110.815	-0.185	0.050	0.050	0.135
RN	0.000	0.073	0.073	0.050	0.000	0.023

Datum Disc planes

⌖	MM	LOC3 - PLNC_DD_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	27.000	29.304	2.304	10.000	10.000	0.000
FL	0.000	0.059	0.059	0.100	0.000	0.000

⌖	MM	LOC4 - PLNC_DD_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1034.384	-1034.201	0.183	10.000	10.000	0.000
FL	0.000	0.115	0.115	0.100	0.000	0.015

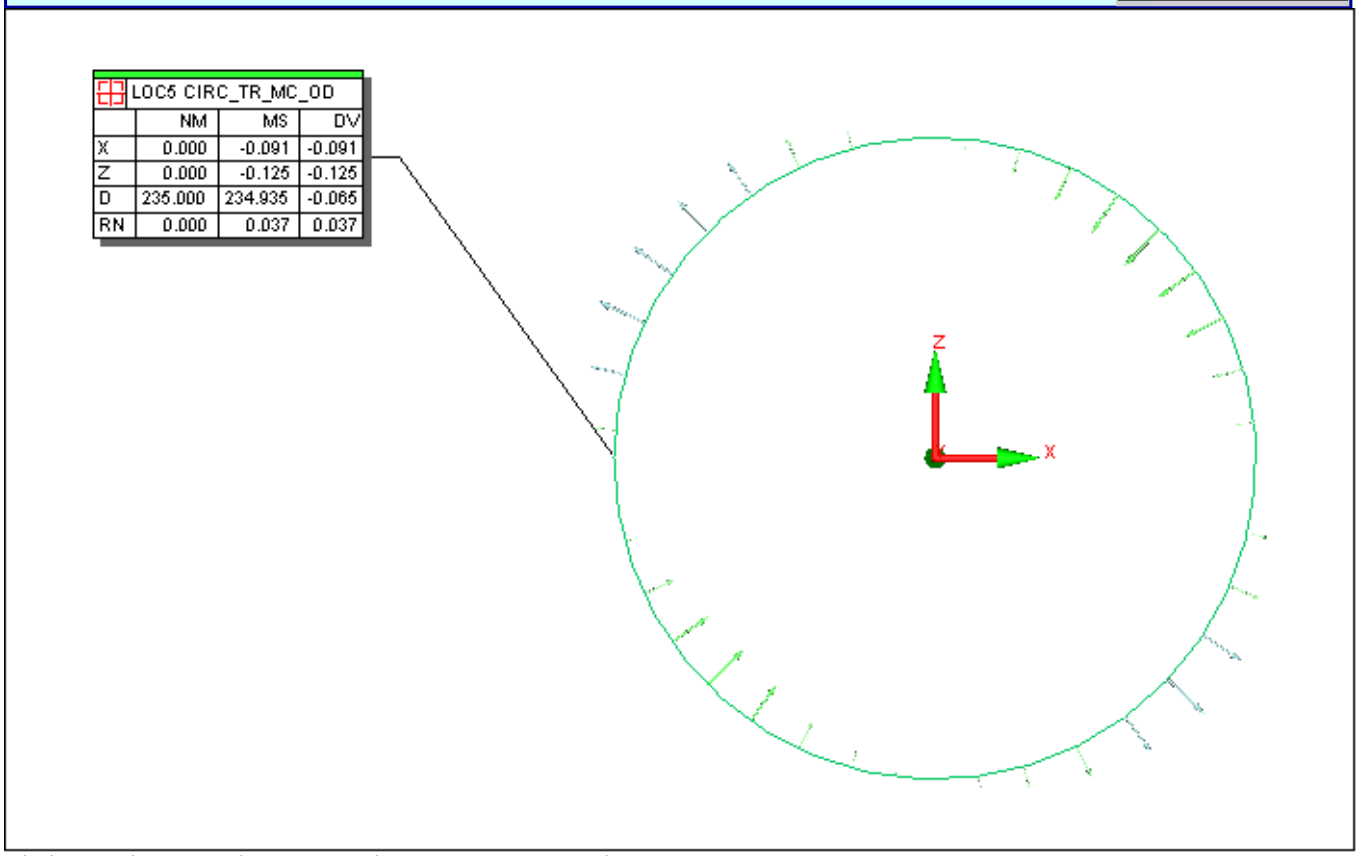
Distance between Datum Disc planes

↔	MM	DIST1 - PLNC_DD_FP TO PLNC_DD_MC (YAXIS)				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	1061.060	1063.505	2.445	0.200	0.200	2.245

Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D.

⌖	MM	LOC5 - CIRC_TR_MC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.091	-0.091	0.250	0.250	0.000
Z	0.000	-0.125	-0.125	0.250	0.250	0.000
D	235.000	234.935	-0.065	0.250	0.250	0.000
RN	0.000	0.037	0.037	0.250	0.000	0.000

○	MM	RND1 - CIRC_TR_MC_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.037	0.037	0.250	0.000	0.000

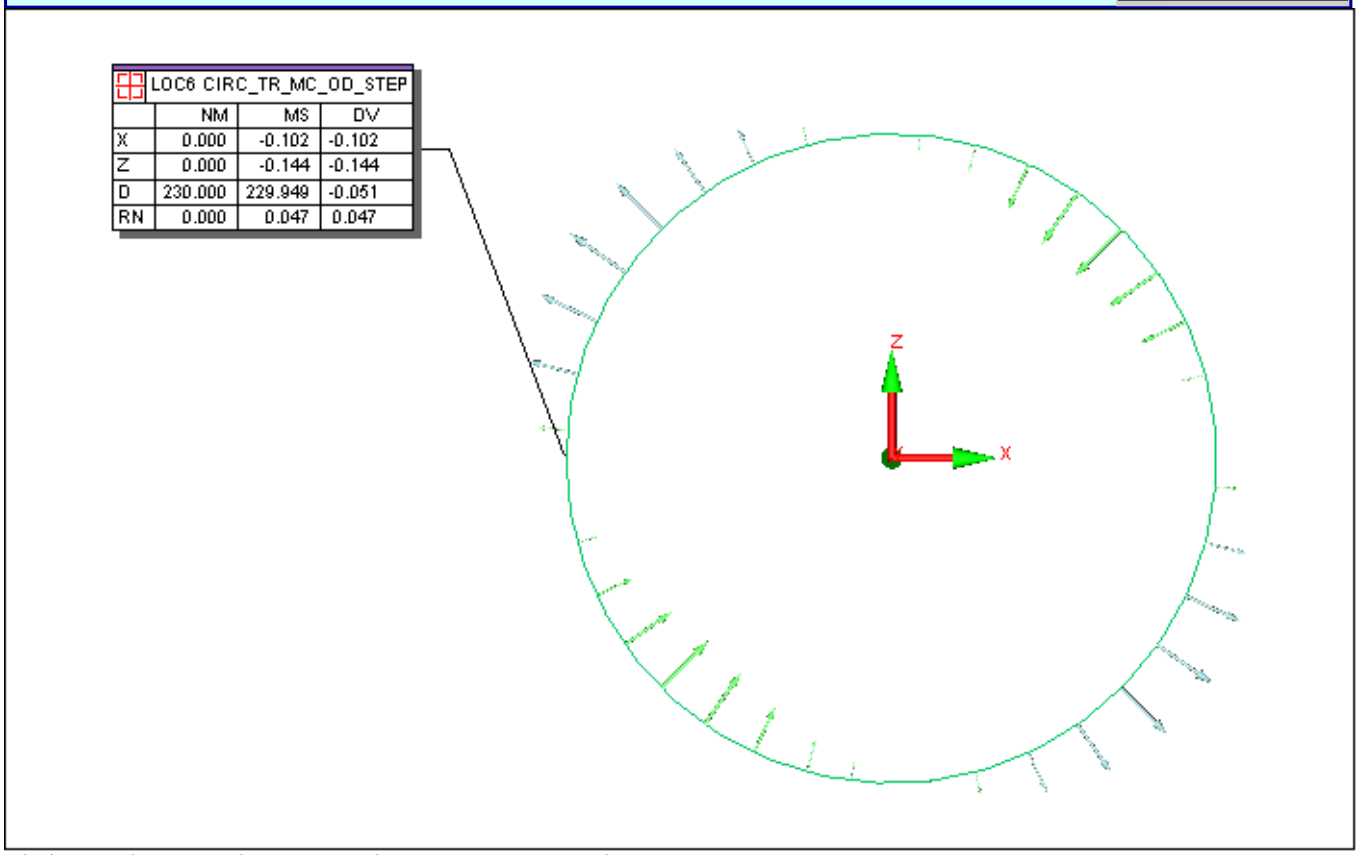


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
235.0 O.D. x1000

Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step

	MM	LOC6 - CIRC_TR_MC_OD_STEP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.102	-0.102	0.250	0.250	0.000
Z	0.000	-0.144	-0.144	0.250	0.250	0.000
D	230.000	229.949	-0.051	0.000	0.250	0.000
RN	0.000	0.047	0.047	0.250	0.000	0.000

	MM	RND2 - CIRC_TR_MC_OD_STEP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.047	0.047	0.250	0.000	0.000

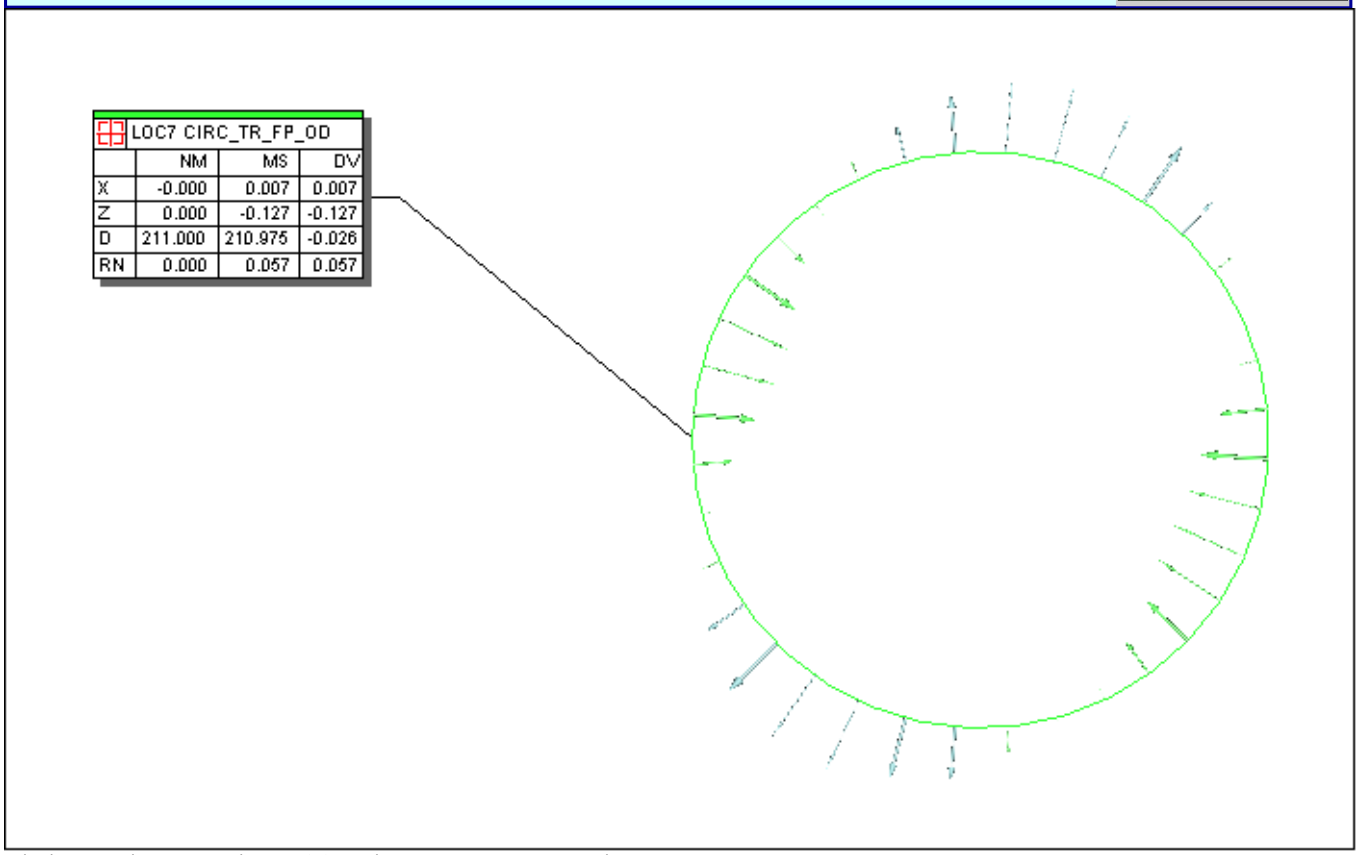


Minimum Circumscribed 36 point constructed circle
Transition Ring Main Coupler end
233.00 O.D. step x1000

Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D.

	MM	LOC7 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.007	0.007	0.250	0.250	0.000
Z	0.000	-0.127	-0.127	0.250	0.250	0.000
D	211.000	210.975	-0.026	0.250	0.250	0.000
RN	0.000	0.057	0.057	0.250	0.000	0.000

	MM	RND3 - CIRC_TR_FP_OD				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.057	0.057	0.250	0.000	0.000

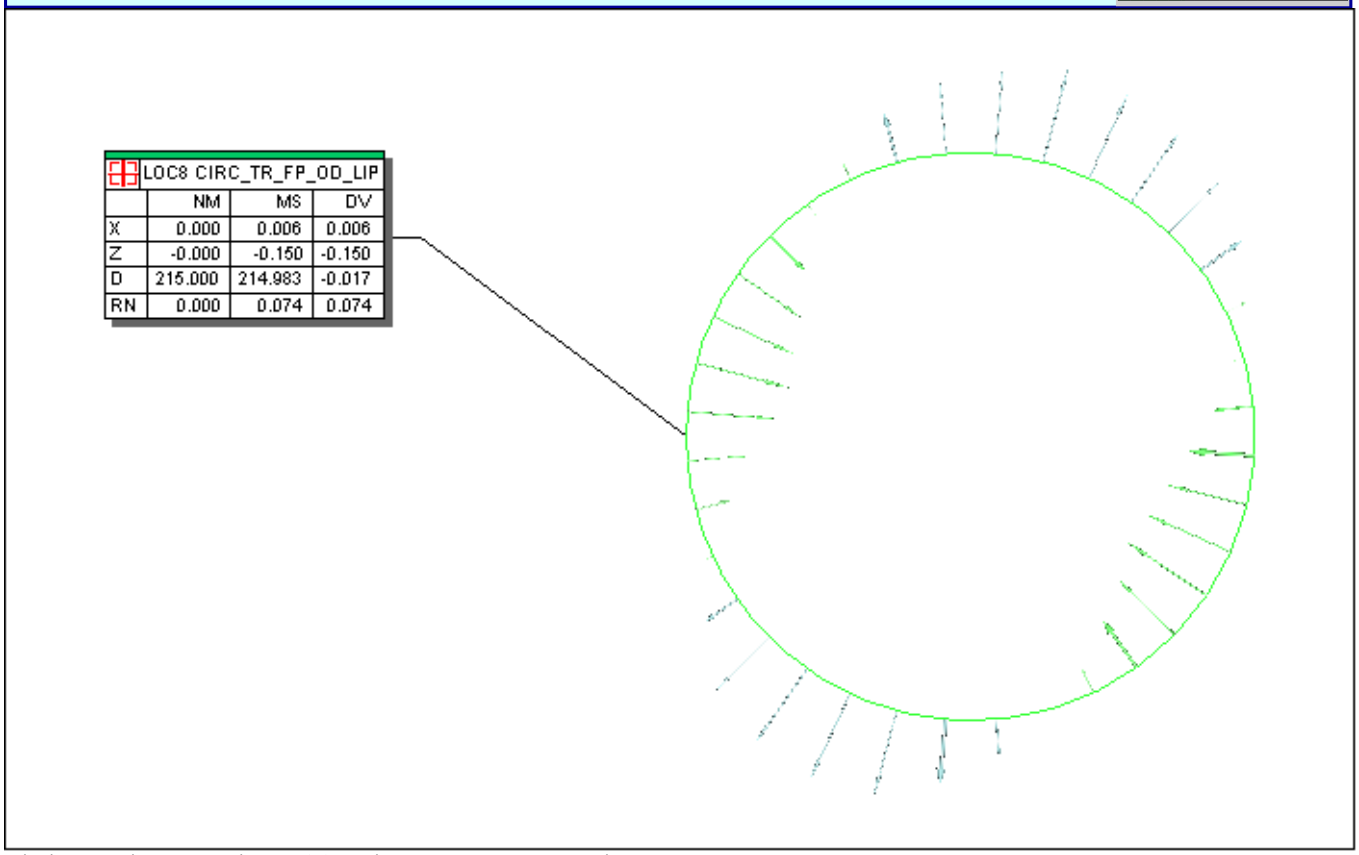


Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
211.0 O.D. x1000

Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
215.0 O.D. lip

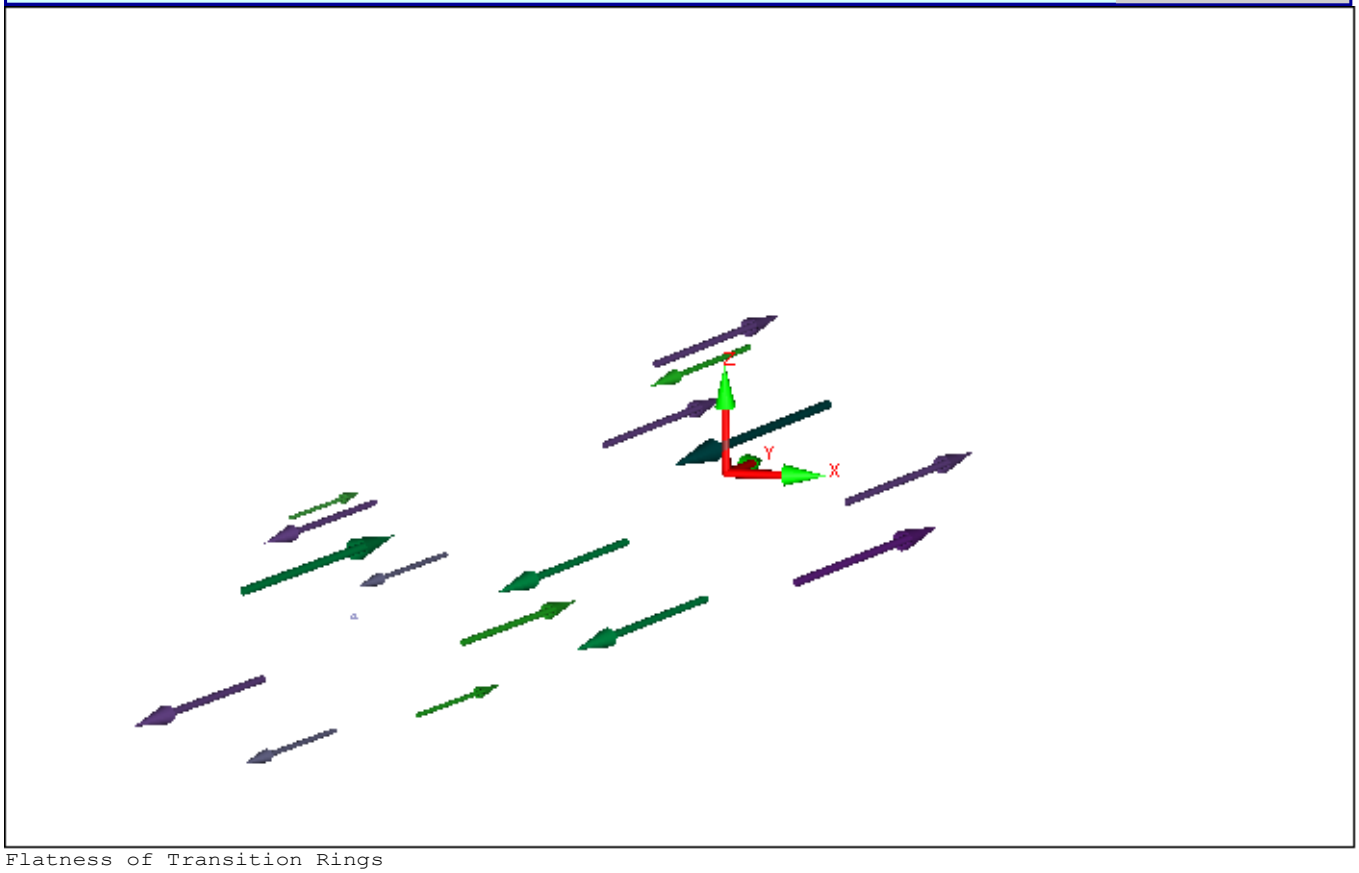
	MM	LOC8 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.006	0.006	0.250	0.250	0.000
Z	0.000	-0.150	-0.150	0.250	0.250	0.000
D	215.000	214.983	-0.017	0.250	0.250	0.000
RN	0.000	0.074	0.074	0.250	0.000	0.000

	MM	RND4 - CIRC_TR_FP_OD_LIP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0.000	0.074	0.074	0.250	0.000	0.000



Minimum Circumscribed 36 point constructed circle
Transition Ring Field Probe end
215.0 O.D. lip x1000

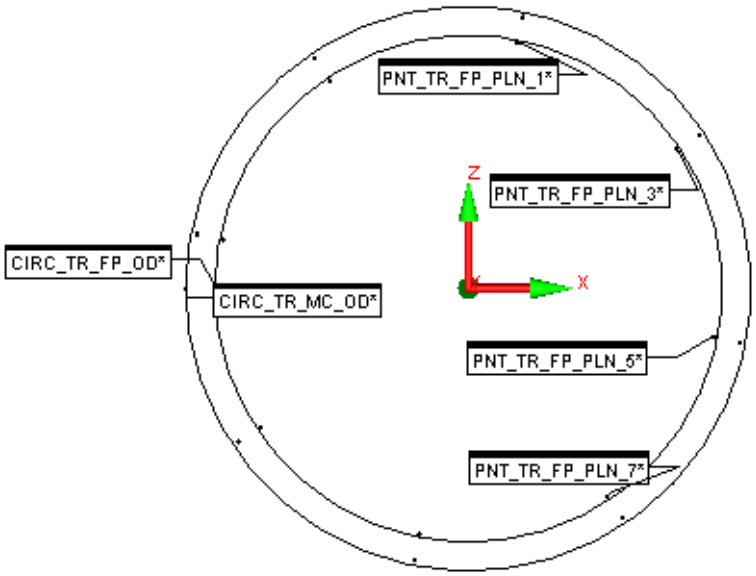
⊕	MM	LOC9 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	0.000	0.000	0.000	0.000	0.000	0.000	
FL	0.000	0.158	0.158	0.200	0.000	0.000	
AX		I		J		K	
V		0.003		1.000		0.005	
⊕	MM	LOC10 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1007.179	0.321	10.000	10.000	0.000	
FL	0.000	0.150	0.150	0.200	0.000	0.000	
AX		I		J		K	
V		0.000		-1.000		0.005	
▱	MM	FLAT3 - PLNC_TR_MC					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.158	0.158	0.200	0.000	0.000	
▱	MM	FLAT4 - PLNC_TR_FP					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	0.000	0.150	0.150	0.200	0.000	0.000	



Flatness of Transition Rings
x5000

⊥	MM	PERP1 - PLNC_TR_MC TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	1.168	1.168	0.200	0	0.968

⊥	MM	PERP2 - PLNC_TR_FP TO LINC_LEVEL_DCC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
M	0	0.963	0.963	0.200	0	0.763



Transition Ring points Main Coupler end

⊕	MM	LOC11 - PNT_TR_MC_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.645	-0.645	1.000	1.000	0.000
PR	115.000	115.063	0.063	1.000	1.000	0.000
PA	101.250	101.281	0.031	1.000	1.000	0.000

⊕	MM	LOC12 - PNT_TR_MC_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.628	-0.628	1.000	1.000	0.000
PR	115.000	115.036	0.036	1.000	1.000	0.000
PA	146.250	146.262	0.012	1.000	1.000	0.000

⊕	MM	LOC13 - PNT_TR_MC_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.112	-0.112	1.000	1.000	0.000
PR	115.000	114.992	-0.008	1.000	1.000	0.000
PA	-168.750	-168.741	0.009	1.000	1.000	0.000

⌖	MM	LOC14 - PNT_TR_MC_PLN_7				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.368	0.368	1.000	1.000	0.000
PR	115.000	114.958	-0.042	1.000	1.000	0.000
PA	-123.750	-123.728	0.022	1.000	1.000	0.000

⌖	MM	LOC15 - PNT_TR_MC_PLN_9				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.523	0.523	1.000	1.000	0.000
PR	115.000	114.943	-0.057	1.000	1.000	0.000
PA	-78.750	-78.710	0.040	1.000	1.000	0.000

⌖	MM	LOC16 - PNT_TR_MC_PLN_11				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.477	0.477	1.000	1.000	0.000
PR	115.000	114.969	-0.032	1.000	1.000	0.000
PA	-33.750	-33.694	0.056	1.000	1.000	0.000

⌖	MM	LOC17 - PNT_TR_MC_PLN_13				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	0.243	0.243	1.000	1.000	0.000
PR	115.000	115.011	0.011	1.000	1.000	0.000
PA	11.250	11.314	0.064	1.000	1.000	0.000

⌖	MM	LOC18 - PNT_TR_MC_PLN_15				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	0.000	-0.226	-0.226	1.000	1.000	0.000
PR	115.000	115.049	0.049	1.000	1.000	0.000
PA	56.250	56.303	0.053	1.000	1.000	0.000

Transition Ring points Field Probe end

⌖	MM	LOC19 - PNT_TR_FP_PLN_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1006.769	0.731	1.000	1.000	0.000
PR	104.000	104.063	0.063	1.000	1.000	0.000
PA	101.250	101.268	0.018	1.000	1.000	0.000

⌖	MM	LOC20 - PNT_TR_FP_PLN_3				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1006.970	0.530	1.000	1.000	0.000
PR	104.000	104.022	0.022	1.000	1.000	0.000
PA	146.250	146.252	0.002	1.000	1.000	0.000

⌖	MM	LOC21 - PNT_TR_FP_PLN_5				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
Y	-1007.500	-1007.225	0.275	1.000	1.000	0.000
PR	104.000	103.971	-0.029	1.000	1.000	0.000
PA	-168.750	-168.746	0.004	1.000	1.000	0.000

⌖	MM	LOC22 - PNT_TR_FP_PLN_7					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1007.542	-0.042	1.000	1.000	0.000	
PR	104.000	103.935	-0.066	1.000	1.000	0.000	
PA	-123.750	-123.725	0.025	1.000	1.000	0.000	
⌖	MM	LOC23 - PNT_TR_FP_PLN_9					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1007.697	-0.197	1.000	1.000	0.000	
PR	104.000	104.091	0.091	1.000	1.000	0.000	
PA	-78.750	-78.698	0.052	1.000	1.000	0.000	
⌖	MM	LOC24 - PNT_TR_FP_PLN_11					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1007.505	-0.005	1.000	1.000	0.000	
PR	104.000	104.090	0.090	1.000	1.000	0.000	
PA	-33.750	-33.737	0.013	1.000	1.000	0.000	
⌖	MM	LOC25 - PNT_TR_FP_PLN_13					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1006.992	0.508	1.000	1.000	0.000	
PR	104.000	104.033	0.034	1.000	1.000	0.000	
PA	11.250	11.235	-0.015	1.000	1.000	0.000	
⌖	MM	LOC26 - PNT_TR_FP_PLN_15					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
Y	-1007.500	-1006.734	0.766	1.000	1.000	0.000	
PR	104.000	103.957	-0.043	1.000	1.000	0.000	
PA	56.250	56.239	-0.011	1.000	1.000	0.000	

Distances between matching points on Transition Rings

↔	MM	DIST_PA_11.25 - PNT_TR_MC_PLN_13 TO PNT_TR_FP_PLN_13 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1007.235	-0.265	1.000	1.000	0.000	
↔	MM	DIST_PA_56.25 - PNT_TR_MC_PLN_15 TO PNT_TR_FP_PLN_15 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1006.509	-0.991	1.000	1.000	0.000	
↔	MM	DIST_PA_101.25 - PNT_TR_MC_PLN_1 TO PNT_TR_FP_PLN_1 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1006.124	-1.376	1.000	1.000	-0.376	
↔	MM	DIST_PA_146.25 - PNT_TR_MC_PLN_3 TO PNT_TR_FP_PLN_3 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1006.342	-1.158	1.000	1.000	-0.158	
↔	MM	DIST_PA_-168.75 - PNT_TR_MC_PLN_5 TO PNT_TR_FP_PLN_5 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1007.113	-0.387	1.000	1.000	0.000	

↔	MM	DIST_PA_-123.75 - PNT_TR_MC_PLN_7 TO PNT_TR_FP_PLN_7 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1007.909	0.409	1.000	1.000	0.000	

↔	MM	DIST_PA_-78.75 - PNT_TR_MC_PLN_9 TO PNT_TR_FP_PLN_9 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1008.220	0.720	1.000	1.000	0.000	

↔	MM	DIST_PA_-33.75 - PNT_TR_MC_PLN_11 TO PNT_TR_FP_PLN_11 (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1007.982	0.482	1.000	1.000	0.000	

↔	MM	DIST_BETWEEN_PLANES - PLNC_TR_MC TO PLNC_TR_FP (YAXIS)					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
M	1007.500	1007.179	-0.321	1.000	1.000	0.000	

LOCATIONS OF CONSTRUCTED CIRCLES
ON 18 HALF CELLS

⊕	MM	LOC_CC3 - CIRC_CAV_1_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.015	0.015	0.200	0.200	0.000	
Y	0.000	-968.506	-968.506	2000.000	2000.000	0.000	
Z	0.000	-0.184	-0.184	0.200	0.200	0.000	
D	210.300	211.024	0.724	0.200	0.200	0.524	
RN	0.000	0.194	0.194	0.200	0.000	0.000	

⊕	MM	LOC_CC4 - CIRC_CAV_1_2					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	-0.009	-0.009	0.200	0.200	0.000	
Y	0.000	-959.785	-959.785	2000.000	2000.000	0.000	
Z	0.000	-0.195	-0.195	0.200	0.200	0.000	
D	210.300	211.185	0.885	0.200	0.200	0.685	
RN	0.000	0.168	0.168	0.200	0.000	0.000	

⊕	MM	LOC_CC5 - CIRC_CAV_2_1					
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL	
X	0.000	0.020	0.020	0.200	0.200	0.000	
Y	0.000	-853.019	-853.019	2000.000	2000.000	0.000	
Z	0.000	-0.444	-0.444	0.200	0.200	0.244	
D	210.300	211.110	0.810	0.200	0.200	0.610	
RN	0.000	0.185	0.185	0.200	0.000	0.000	

⊕	MM	LOC_CC6 - CIRC_CAV_2_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.010	0.010	0.200	0.200	0.000
Y	0.000	-844.195	-844.195	2000.000	2000.000	0.000
Z	0.000	-0.536	-0.536	0.200	0.200	0.336
D	210.300	210.988	0.688	0.200	0.200	0.488
RN	0.000	0.231	0.231	0.200	0.000	0.031

⊕	MM	LOC_CC7 - CIRC_CAV_3_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.035	-0.035	0.200	0.200	0.000
Y	0.000	-737.514	-737.514	2000.000	2000.000	0.000
Z	0.000	-0.750	-0.750	0.200	0.200	0.550
D	210.300	211.121	0.821	0.200	0.200	0.621
RN	0.000	0.165	0.165	0.200	0.000	0.000

⊕	MM	LOC_CC8 - CIRC_CAV_3_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.011	-0.011	0.200	0.200	0.000
Y	0.000	-729.057	-729.057	2000.000	2000.000	0.000
Z	0.000	-0.739	-0.739	0.200	0.200	0.539
D	210.300	211.156	0.856	0.200	0.200	0.656
RN	0.000	0.172	0.172	0.200	0.000	0.000

⊕	MM	LOC_CC9 - CIRC_CAV_4_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.007	0.007	0.200	0.200	0.000
Y	0.000	-621.862	-621.862	2000.000	2000.000	0.000
Z	0.000	-0.878	-0.878	0.200	0.200	0.678
D	210.300	210.947	0.647	0.200	0.200	0.447
RN	0.000	0.202	0.202	0.200	0.000	0.002

⊕	MM	LOC_CC10 - CIRC_CAV_4_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.015	0.015	0.200	0.200	0.000
Y	0.000	-613.283	-613.283	2000.000	2000.000	0.000
Z	0.000	-0.832	-0.832	0.200	0.200	0.632
D	210.300	211.120	0.820	0.200	0.200	0.620
RN	0.000	0.201	0.201	0.200	0.000	0.001

⊕	MM	LOC_CC11 - CIRC_CAV_5_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.006	-0.006	0.200	0.200	0.000
Y	0.000	-506.654	-506.654	2000.000	2000.000	0.000
Z	0.000	-0.865	-0.865	0.200	0.200	0.665
D	210.300	210.890	0.590	0.200	0.200	0.390
RN	0.000	0.180	0.180	0.200	0.000	0.000

⊕	MM	LOC_CC12 - CIRC_CAV_5_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.049	-0.049	0.200	0.200	0.000
Y	0.000	-497.760	-497.760	2000.000	2000.000	0.000
Z	0.000	-0.854	-0.854	0.200	0.200	0.654
D	210.300	211.120	0.820	0.200	0.200	0.620
RN	0.000	0.219	0.219	0.200	0.000	0.019

⊕	MM	LOC_CC13 - CIRC_CAV_6_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.020	-0.020	0.200	0.200	0.000
Y	0.000	-390.860	-390.860	2000.000	2000.000	0.000
Z	0.000	-0.784	-0.784	0.200	0.200	0.584
D	210.300	210.990	0.690	0.200	0.200	0.490
RN	0.000	0.226	0.226	0.200	0.000	0.026

⊕	MM	LOC_CC14 - CIRC_CAV_6_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.046	-0.046	0.200	0.200	0.000
Y	0.000	-381.874	-381.874	2000.000	2000.000	0.000
Z	0.000	-0.793	-0.793	0.200	0.200	0.593
D	210.300	211.130	0.830	0.200	0.200	0.630
RN	0.000	0.208	0.208	0.200	0.000	0.008

⊕	MM	LOC_CC15 - CIRC_CAV_7_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.040	-0.040	0.200	0.200	0.000
Y	0.000	-275.468	-275.468	2000.000	2000.000	0.000
Z	0.000	-0.630	-0.630	0.200	0.200	0.430
D	210.300	210.987	0.687	0.200	0.200	0.487
RN	0.000	0.211	0.211	0.200	0.000	0.011

⊕	MM	LOC_CC16 - CIRC_CAV_7_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.071	-0.071	0.200	0.200	0.000
Y	0.000	-266.763	-266.763	2000.000	2000.000	0.000
Z	0.000	-0.638	-0.638	0.200	0.200	0.438
D	210.300	211.057	0.757	0.200	0.200	0.557
RN	0.000	0.165	0.165	0.200	0.000	0.000

⊕	MM	LOC_CC17 - CIRC_CAV_8_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.033	-0.033	0.200	0.200	0.000
Y	0.000	-159.666	-159.666	2000.000	2000.000	0.000
Z	0.000	-0.477	-0.477	0.200	0.200	0.277
D	210.300	211.151	0.851	0.200	0.200	0.651
RN	0.000	0.146	0.146	0.200	0.000	0.000

⊕	MM	LOC_CC18 - CIRC_CAV_8_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.014	0.014	0.200	0.200	0.000
Y	0.000	-150.902	-150.902	2000.000	2000.000	0.000
Z	0.000	-0.494	-0.494	0.200	0.200	0.294
D	210.300	211.206	0.906	0.200	0.200	0.706
RN	0.000	0.263	0.263	0.200	0.000	0.063

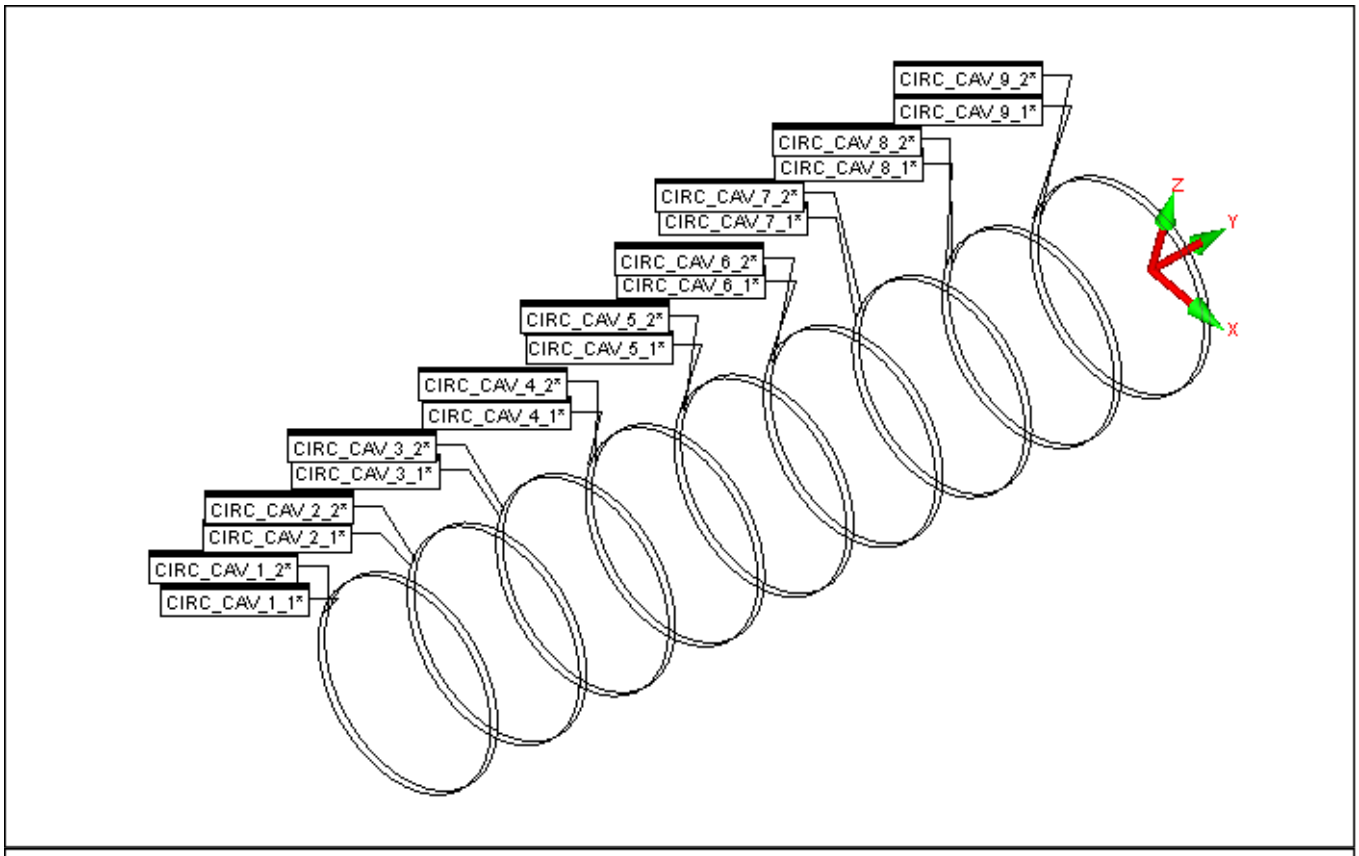
⊕	MM	LOC_CC19 - CIRC_CAV_9_1				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.028	-0.028	0.200	0.200	0.000
Y	0.000	-44.222	-44.222	2000.000	2000.000	0.000
Z	0.000	-0.234	-0.234	0.200	0.200	0.034
D	210.300	211.034	0.734	0.200	0.200	0.534
RN	0.000	0.205	0.205	0.200	0.000	0.005

⊕	MM	LOC_CC20 - CIRC_CAV_9_2				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.011	-0.011	0.200	0.200	0.000
Y	0.000	-35.523	-35.523	2000.000	2000.000	0.000
Z	0.000	-0.194	-0.194	0.200	0.200	0.000
D	210.300	211.149	0.849	0.200	0.200	0.649
RN	0.000	0.190	0.190	0.200	0.000	0.000

Location of End Flanges

⊕	MM	LOC_23 - CIR_END_FLANGE_MC				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	-0.030	-0.030	0.200	0.200	0.000
Y	0.000	116.834	116.834	2000.000	2000.000	0.000
Z	0.000	0.228	0.228	0.200	0.200	0.028
D	140.000	140.025	0.025	0.300	0.300	0.000
RN	0.000	0.010	0.010	0.200	0.000	0.000

⊕	MM	LOC_24 - CIR_END_FLANGE_FP				
AX	NOMINAL	MEAS	DEV	+TOL	-TOL	OUTTOL
X	0.000	0.019	0.019	0.200	0.200	0.000
Y	-1153.884	-1120.549	33.335	2000.000	2000.000	0.000
Z	0.000	0.270	0.270	0.200	0.200	0.070
D	140.000	139.960	-0.040	0.300	0.300	0.000
RN	0.000	0.007	0.007	0.200	0.000	0.000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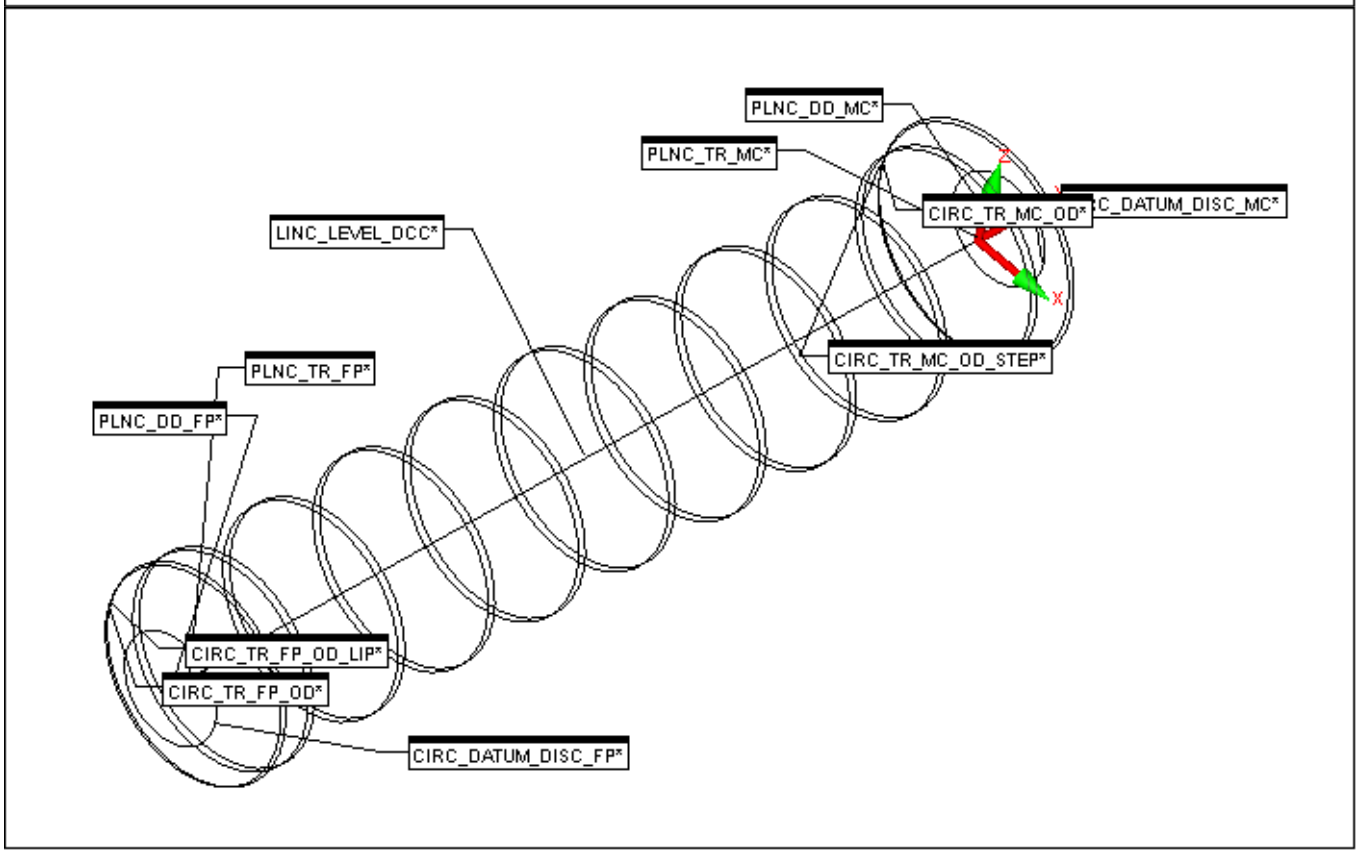
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